National Institute of Environmental Health Sciences

Seasonal distribution and epidemiological characteristics of human metapneumovirus infections in pediatric inpatients in Southeast China

Author(s): Wang Y, Chen Z, Yan YD, Guo H, Chu C, Liu J, Ding Y, Shao X, Xu J, Ji W
Year: 2013
Journal: Archives of Virology. 158 (2): 417-424

Abstract:

Human metapneumovirus (hMPV) is an important respiratory pathogen in young children whose seasonal activity varies substantially from year to year among different populations. This study was conducted to investigate if there was a seasonal variation in the incidence of hMPV infection in young children and possible associations between hMPV infection and local meteorological parameters in Suzhou, China. A total of 6,655 children with acute respiratory tract infection (ARTI) admitted to the Children's Hospital affiliated to Soochow University, Suzhou, were tested from January 2006 to December 2009 for the presence of hMPV using reverse-transcription polymerase chain reaction. The relationship between the presence of the virus and regional meteorological conditions was analyzed by linear and multivariate regression analysis. The overall hMPV infection incidence over the four-year study was 8.2 %, 8.1 %, 12.7 % and 7.4 % per year, respectively. Four hundred eighty-eight hMPV-positive children (78.2 %) were younger than 3 years of age. hMPV infections appear to have a seasonal distribution in Suzhou. In 2006, 2007 and 2009, the peak seasons were in December to January, while in 2008, the peak of hMPV activity occurred in May. The incidence of hMPV infection was negatively correlated with the average monthly temperature and rainfall. hMPV was one of the most common viral pathogens after respiratory syncytial virus that was associated with acute respiratory tract infection in children in Suzhou. hMPV infection occurred throughout the year with peaks during late winter and early spring. Climatic factors, especially monthly average temperature, may affect the prevalence of hMPV in Suzhou.

Source: http://dx.doi.org/10.1007/s00705-012-1492-7

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Precipitation, Solar Radiation, Temperature

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: China

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Respiratory Effect

Respiratory Effect: Other Respiratory Effect

Respiratory Condition (other) : Human metapneumovirus

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Children

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content